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24 Dec 2005

Re: Application No. 10/031,942 - appeal brief (second time after restarting execution)

1) *Party of interest:* Yehouda Harpaz (sole inventor).

2) *Related appeals and interferences:* Appeals for 10/031,890 and 10/031,776 are dealing with similar issues.

3) *Status of claims:* Claim 1-3 - cancelled.
Claims 4-5 - rejected.

The appeal is against the rejection of Claims 4-5.

4) *Status of Amendments:* The claims are amended make them a little clearer, and comply with the comments of the examiner. Note that this amendment is with respect to the claims as they were in my 16 Dec 2004 letter (filed on 27 Dec 2004).

5) *Summary of the invention:* An electronic board which is played by touching points, with a novel behaviour. The behaviour is that when point is pressed, points in a prespecified pattern around the touched points which are illuminated in the current player's colour are switched off, and the same for the other colour, but using a different pattern. This gives a game in which each player tries to switch off the other player's points without switching off his own points.

6) *Grounds for rejection:*

Double patenting: Claim 5 was provisionally rejected under the doctrine of obviousness-type double patenting as being unpatentable over claims 1 of copending application 10/031,776 and claims 3-4 of copending application 10/031,890. This is discussed in section 7.a below.

Claim Rejections – 35 USC 112: Claims 4 and 5 were rejected as being indefinite for failing to particularly point out and distinctly claim the subject matter. This is discussed in section 7.b. below.

Claim rejections - 35 USC 103: Claims 4 and 5 were rejected under 35 U.S.C. 103 as being unpatentable over Weiner *et al* (US 5,573,245)) further in view of Lites Out! This is discussed in 7.c below.

7) *Argument:*

(a) **Double Patenting**

(a.1) The behaviour of the board which is described in the current application is very different from the behaviour that is described in application 10.031,776. The differences are:

(i) In the current application, a point is always a legal move, while the point of 10/031,776 is that an unilluminated point may or may not be a legal move (i.e. may or may not be switched on).

(ii) In the current application, when a player touches a point, a pattern of points around

the point is affected (some of them are switched off). In 10/031,776, only the touched point changes.

(a.2) Thus a board that whenever an unilluminated point is touched some points around this point are switched off is in the scope of the current application, but not in the scope of the 10/031,776. Conversely, a board that checks the legality of a move as described in the current application and if it is legal switched the point on is in the scope of 10/031,776, but outside the scope of the current application. Thus each of 10/031,776 and the current application has a scope that extends outside the scope of the other, therefore neither of them encompasses the other, and they are patentably distinct. .

(a.3) The same is true about application 10/031,890, where the difference is whether points are switched on or off. A board which switches on points when a point is touched is inside 10/031,890, but outside the scope of the current application, and a board which switches points off is inside the scope of the current application but outside the scope of 10/031,890. Therefore they are patentably distinct.

(a.4) In any case, once one of these applications is approved, I will file an appropriate terminal disclaimer to remove any objection of double patenting.

(b) Claim rejections - 35 USC 112

(b.1) I fixed the points that were raised in the latest final rejection in the claims that are attached in appendix 8. In particular, I removed all quotes (without crossing them), made references to the same concept consistent, and eliminated reference to a "player" as an entity external to the board. Everything that is mentioned now in the claims is a feature of the board itself.

(b.2) The changes do not affect the contents of the claims in any meaningful way.

(c) Claim Rejections - 35 USC 103: Claims 4 and 5

(c.1) The action claims that the behaviour that is described in claims 4 and 5 is unpatentable over Weiner *et al* in view of Lites out! However, this conclusion is reached by ignoring most of the elements in the behaviour that is described in the second half of Claim 5.

(c.2) The element that *is* found in Weiner *et al* is changing a pattern around the pressed point. However, the following elements are not found either in Weiner *et al* or in Lites out!:

(a) Using different patterns for the two colours.

(b) Switching the patterns between the colours in each turn (point press).

Because the current colour changes each turn, the pattern that is applied to a colour is the one for the current colour in one point press and the other pattern in the next point press.

(c) The changes are only switching off of points.

(d) The game ends when there are illuminated points only of one colour (and because points are only switched off, most of points are switched off).

Note that the action mentioned that in Weiner et al they suggest ending with all points switched on, but that is a different condition.

(e) The colour of the illuminated points in the end is the winner.

(c.3) These elements make very little sense or no sense at all within the setting of Weiner *et*

al and Lites out!, because these are not set up for two-players games. Even if we assume two-players games (which is not an obvious thing to do with the settings of Blumberg *et al* or Lites out!), elements (a), (b) and (c) are still not obvious, and using the combination of all them is very non-obvious.

(c.4) On pages 8-9 of the action there is a response to my argument. All the points that are raised in this section have already been answered in my letter of the 16 Dec 2004, which is filed on 27 Dec 2004. Section (C) of the 16 Dec 2004 letter discusses in detail all the response of the examiner. The following comments are a copy from this letter.

(c.5) (a) Using different patterns for the two colours: This is now made explicit in the amended claims as discussed in (a) above.

(c.6) (b) Switching the pattern between the colours in each turn (point press): This is argued against with a reference to specific text in Weiner *et al*. However, there is nothing about switching patterns in each point press or switching them between the colours in the text that is referred to in Weiner *et al*, or indeed anywhere in Weiner *et al* or Lites Out!. Thus this element is clearly novel. The text that the examiner refers to also does not make it obvious to switch the patterns, either between the colours or in each turn, as there is nothing there (or anywhere in Weiner *et al* or Lites Out!) that points in this direction. As discussed in (c.2) above, this element is what makes the behaviour an implementation of a two-player game (with the "declaration" of winner, element (e)).

(c.7) (c) The changes are only switching off of points: I didn't understand the argument against this one. It seems to argue that switching a point off changes its colour, therefore changes in colour can be called switching off, and hence the changes in Weiner *et al* or Lites Out! can be regarded also as switching off only. This does not make sense to me, but I cannot think of a better interpretation. In Weiner *et al* and Lites Out! there are always changes in both directions, so this element does not appear in them. It is not obvious because within the setting of Weiner *et al* and Lites Out! it will make a game that is far too simple, as it will simply switch off all the points in very few moves. Note that element (c) has never appeared until now anywhere except in the current application, which shows it is quite non-obvious.

(c.8) (d) The game ends when there are illuminated points only in one colour (and because points are only switched off, most of the points are switched off) : This is argued against by "Switching off of a point changes its colour". That is clearly not a reasonable argument, and doesn't show that the element appears in Weiner *et al* or Lites Out! in any way or that the element is obvious.

(c.9) I suspect there may be a misunderstanding here of what Claim 5 says. The text in Claim 5 is (italics added) "when all the points *that are illuminated* are illuminated in the same colour ...". It seems that the examiner may have interpreted it to mean that *all* the points are illuminated in the same colour. As I tried to make clear in the text in parenthesis (above in (c.8) and in the original text in the brief), not all the points are illuminated at this stage of the game. In fact, because points are only switched off during the game, most of points will be switched off, and only few points will still be illuminated in one of the colours. That is not the same as "all points in the same colour".

(c.10) If we accept the insistence of the examiner that switching off a point "changes its colour", then the board I describe has three colours: two illuminated colours (let's call them Red and Green) and one unilluminated colour (Grey). With this terminology, the termination

condition is "when all points are either (Grey or Green) or (Grey or Red)...". There is nothing in *Weiner et al* or in *Lites Out!* that is even close to such a termination condition. Thus using this terminology makes it clear that element (d) is not obvious in *Weiner et al* or *Lites Out*.

(c.11) (e) The colour of the illuminated points in the end is the winner: No argument is presented. This element doesn't make sense at all in the context of *Weiner et al* and *Lites Out!*.

(c.12) Thus of the five elements, none is actually found *Weiner et al* or in *Lites Out!*, alone or in combination, and none of them is obvious.

(c.13) On page 9 it continues to discuss "with respect to (d) and (e) above,..", but does not point to any occurrence of these elements. What it says is :"*Weiner et al* also states that the objective is to go from a starting configuration of indicator states to desired configuration of indicator states (Column 2, 54-56)". That is nothing like the current application, where the termination condition is not a configuration at all. The actual configuration in the end is of no interest whatsoever. It is only which colour are the points that are still illuminated.

(c.14) The example that is given (all point are lit) is an obvious configuration, but again, it is not the termination condition of the current application (see in (c.10) above), and neither is "all points off". Thus this still doesn't show elements (d) and (e), and does not make them less non-obvious.

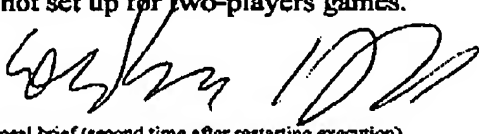
(c.15) It then continues that "*Weiner et al* are very open...", but saying that there are "other possible ending configuration" does not make it obvious to use an ending which is not a configuration (it does not even make obvious using any specific configuration, unless this specific configuration is itself obvious). As explained above, the termination condition in the current application is not a configuration, because the location(s) of the point(s) that are still illuminated (or the Red or Green points in the terminology of (c.10)) is immaterial.

(c.16) In the middle of p. 9 it says: "Applicant states that the elements make little or no sense at all since the references used are not set up for two players games. However two players are not claimed." The latter argument is not to the point. The question whether an element makes sense in the context of *Weiner et al* with *Lites Out!* is not dependent on what else I claim. It is dependent only on the element and the text of *Weiner et al* and *Lites Out!* (and the state of the art).

(c.17) It then says: "*Weiner* discloses in 6:45-55 that two players may play the game". What *Weiner et al* disclose in 6:45-50 is one person playing a full game from starting configuration to end configuration, and then another player playing. However, this method of playing and, importantly, all the other ideas that appear in this paragraph do not make any of the elements (a)-(e) more obvious, and therefore it is irrelevant to the discussion here.

(c.18) Summary: None of the 5 elements (a)-(e) which were discussed above (and listed in paragraph (c.2) of the argument in the *original* appeal brief) appears in *Weiner et al* with *Lites Out!*. Apart from (c) they are clearly non-obvious with respect to *Weiner et al* and *Lites Out!*, and even (c) is not actually obvious. Their combination is very non-obvious, and in the context of the devices and programs of *Weiner et al* and *Lites Out!* doesn't make sense, because the latter are not set up for two-players games.

Yehouda Harpaz



24 Dec 2005

8) *Claims:*

1-3 (cancelled)

4 (currently amended) A board as described in Claim 5, where the arrangement of the points is square, and when ~~a player presses~~ a point is pressed the board switches off points of the current player's colour which can be reached from the pressed point by moving three point along the line or the column that the pressed point is in and then moving two points in orthogonal direction, and points of the other colour which can be reached from the pressed point by moving two points along the said row or the said column and then moving one point in an orthogonal direction.

5 (Currently amended) An electronic board comprising a grid of grid points on a flat surface, where each grid point is a visible element which is capable of detecting when it is pressed, and an illumination source inside or below the surface which is capable illuminating the visible element by either of two colours;

which exhibits a behaviour which makes it useful for playing various games;

and in one of these games the behaviour of the board is as follows:

the game starts with an equal number of points illuminated in each of the two colours;

the board remembers two fixed patterns of points with respect to the point that is

pressed, which will be referred to as ~~one~~ the current player pattern and ~~one~~ the opponent player pattern;

the board keeps a record of one of the colours above as the current player colour;

when ~~a player presses~~ a point is pressed, the board switches off points in the current player colour that are in the current player pattern with respect to the pressed point and points in the other colour that are in the opponent player pattern with respect to the pressed point, and then makes the other colour the current player colour;

when all the points that are illuminated are illuminated in the same colour, the board declares the player of this colour as winner.

9. Appendix - Evidence

There is no relevant evidence.

10. *Appendix - Related proceedings*

Not applicable.

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(a.1) The behaviour of the board which is described in the current application is very different from the behaviour that is described in application 10.031,776. The differences are:

(i) In the current application, a point is always a legal move, while the point of 10/031,776 is that an unilluminated point may or may not be a legal move (i.e. may or may not be switched on).

(ii) In the current application, when a player touches a point, a pattern of points around

the point is affected (some of them are switched off). In 10/031,776, only the touched point changes.

(a.2) Thus a board that whenever an unilluminated point is touched some points around this point are switched off is in the scope of the current application, but not in the scope of the 10/031,776. Conversely, a board that checks the legality of a move as described in the current application and if it is legal switched the point on is in the scope of 10/031,776, but outside the scope of the current application. Thus each of 10/031,776 and the current application has a scope that extends outside the scope of the other, therefore neither of them encompasses the other, and they are patentably distinct. .

(a.3) The same is true about application 10/031,890, where the difference is whether points are switched on or off. A board which switches on points when a point is touched is inside 10/031,890, but outside the scope of the current application, and a board which switches points off is inside the scope of the current application but outside the scope of 10/031,890. Therefore they are patentably distinct.

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(b.1) I fixed the points that were raised in the latest final rejection in the claims that are attached in appendix 8. In particular, I removed all quotes (without crossing them), made references to the same concept consistent, and eliminated reference to a "player" as an entity external to the board. Everything that is mentioned now in the claims is a feature of the board itself.

(b.2) The changes do not affect the contents of the claims in any meaningful way.

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(c.1) The action claims that the behaviour that is described in claims 4 and 5 is unpatentable over Weiner *et al* in view of Lites out! However, this conclusion is reached by ignoring most of the elements in the behaviour that is described in the second half of Claim 5.

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al and Lites out!, because these are not set up for two-players games. Even if we assume two-players games (which is not an obvious thing to do with the settings of Blumberg *et al* or Lites out!), elements (a), (b) and (c) are still not obvious, and using the combination of all them is very non-obvious.

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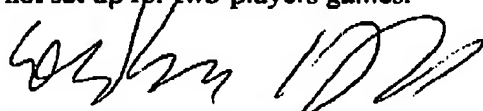
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(c.18) Summary: None of the 5 elements (a)-(e) which were discussed above (and listed in paragraph (c.2) of the argument in the *original* appeal brief) appears in *Weiner et al* with *Lites Out!*. Apart from (c) they are clearly non-obvious with respect to *Weiner et al* and *Lites Out!*, and even (c) is not actually obvious. Their combination is very non-obvious, and in the context of the devices and programs of *Weiner et al* and *Lites Out!* doesn't make sense, because the latter are not set up for two-players games.

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9. *Appendix - Evidence*

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the point is affected (some of them are switched off). In 10/031,776, only the touched point changes.

(a.2) Thus a board that whenever an unilluminated point is touched some points around this point are switched off is in the scope of the current application, but not in the scope of the 10/031,776. Conversely, a board that checks the legality of a move as described in the current application and if it is legal switched the point on is in the scope of 10/031,776, but outside the scope of the current application. Thus each of 10/031,776 and the current application has a scope that extends outside the scope of the other, therefore neither of them encompasses the other, and they are patentably distinct. .

(a.3) The same is true about application 10/031,890, where the difference is whether points are switched on or off. A board which switches on points when a point is touched is inside 10/031,890, but outside the scope of the current application, and a board which switches points off is inside the scope of the current application but outside the scope of 10/031,890. Therefore they are patentably distinct.

(a.4) In any case, once one of these applications is approved, I will file an appropriate terminal disclaimer to remove any objection of double patenting.

(b) Claim rejections - 35 USC 112

(b.1) I fixed the points that were raised in the latest final rejection in the claims that are attached in appendix 8. In particular, I removed all quotes (without crossing them), made references to the same concept consistent, and eliminated reference to a "player" as an entity external to the board. Everything that is mentioned now in the claims is a feature of the board itself.

(b.2) The changes do not affect the contents of the claims in any meaningful way.

(c) Claim Rejections - 35 USC 103: Claims 4 and 5

(c.1) The action claims that the behaviour that is described in claims 4 and 5 is unpatentable over Weiner *et al* in view of Lites out! However, this conclusion is reached by ignoring most of the elements in the behaviour that is described in the second half of Claim 5.

(c.2) The element that *is* found in Weiner *et al* is changing a pattern around the pressed point. However, the following elements are not found either in Weiner *et al* or in Lites out!:

(a) Using different patterns for the two colours.

(b) Switching the patterns between the colours in each turn (point press).

Because the current colour changes each turn, the pattern that is applied to a colour is the one for the current colour in one point press and the other pattern in the next point press.

(c) The changes are only switching off of points.

(d) The game ends when there are illuminated points only of one colour (and because points are only switched off, most of points are switched off).

Note that the action mentioned that in Weiner et al they suggest ending with all points switched on, but that is a different condition.

(e) The colour of the illuminated points in the end is the winner.

(c.3) These elements make very little sense or no sense at all within the setting of Weiner *et*

al and Lites out!, because these are not set up for two-players games. Even if we assume two-players games (which is not an obvious thing to do with the settings of Blumberg *et al* or Lites out!), elements (a), (b) and (c) are still not obvious, and using the combination of all them is very non-obvious.

(c.4) On pages 8-9 of the action there is a response to my argument. All the points that are raised in this section have already been answered in my letter of the 16 Dec 2004, which is filed on 27 Dec 2004. Section (C) of the 16 Dec 2004 letter discusses in detail all the response of the examiner. The following comments are a copy from this letter.

(c.5) (a) Using different patterns for the two colours: This is now made explicit in the amended claims as discussed in (a) above.

(c.6) (b) Switching the pattern between the colours in each turn (point press): This is argued against with a reference to specific text in Weiner *et al*. However, there is nothing about switching patterns in each point press or switching them between the colours in the text that is referred to in Weiner *et al*, or indeed anywhere in Weiner *et al* or Lites Out!. Thus this element is clearly novel. The text that the examiner refers to also does not make it obvious to switch the patterns, either between the colours or in each turn, as there is nothing there (or anywhere in Weiner *et al* or Lites Out!) that points in this direction. As discussed in (c.2) above, this element is what makes the behaviour an implementation of a two-player game (with the "declaration" of winner, element (e)).

(c.7) (c) The changes are only switching off of points: I didn't understand the argument against this one. It seems to argue that switching a point off changes its colour, therefore changes in colour can be called switching off, and hence the changes in Weiner *et al* or Lites Out! can be regarded also as switching off only. This does not make sense to me, but I cannot think of a better interpretation. In Weiner *et al* and Lites Out! there are always changes in both directions, so this element does not appear in them. It is not obvious because within the setting of Weiner *et al* and Lites Out! it will make a game that is far too simple, as it will simply switch off all the points in very few moves. Note that element (c) has never appeared until now anywhere except in the current application, which shows it is quite non-obvious.

(c.8) (d) The game ends when there are illuminated points only in one colour (and because points are only switched off, most of the points are switched off) : This is argued against by "Switching off of a point changes its colour". That is clearly not a reasonable argument, and doesn't show that the element appears in Weiner *et al* or Lites Out! in any way or that the element is obvious.

(c.9) I suspect there may be a misunderstanding here of what Claim 5 says. The text in Claim 5 is (italics added) "when all the points *that are illuminated* are illuminated in the same colour ...". It seems that the examiner may have interpreted it to mean that *all* the points are illuminated in the same colour. As I tried to make clear in the text in parenthesis (above in (c.8) and in the original text in the brief), not all the points are illuminated at this stage of the game. In fact, because points are only switched off during the game, most of points will be switched off, and only few points will still be illuminated in one of the colours. That is not the same as "all points in the same colour".

(c.10) If we accept the insistence of the examiner that switching off a point "changes its colour", then the board I describe has three colours: two illuminated colours (let's call them Red and Green) and one unilluminated colour (Grey). With this terminology, the termination

condition is "when all points are either (Grey or Green) or (Grey or Red)...". There is nothing in Weiner *et al* or in Lites Out! that is even close to such a termination condition. Thus using this terminology makes it clear that element (d) is not obvious in Weiner *et al* or Lites Out.

(c.11) (e) The colour of the illuminated points in the end is the winner. No argument is presented. This element doesn't make sense at all in the context of Weiner *et al* and Lites Out!.

(c.12) Thus of the five elements, none is actually found Weiner *et al* or in Lites Out!, alone or in combination, and none of them is obvious.

(c.13) On page 9 it continues to discuss "with respect to (d) and (e) above,...", but does not point to any occurrence of these elements. What it says is : "Weiner *et al* also states that the objective is to go from a starting configuration of indicator states to desired configuration of indicator states (Column 2, 54-56)". That is nothing like the current application, where the termination condition is not a configuration at all. The actual configuration in the end is of no interest whatsoever. It is only which colour are the points that are still illuminated.

(c.14) The example that is given (all point are lit) is an obvious configuration, but again, it is not the termination condition of the current application (see in (c.10) above), and neither is "all points off". Thus this still doesn't show elements (d) and (e), and does not make them less non-obvious.

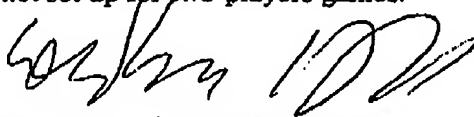
(c.15) It then continues that "Weiner *et al* are very open...", but saying that there are "other possible ending configuration" does not make it obvious to use an ending which is not a configuration (it does not even make obvious using any specific configuration, unless this specific configuration is itself obvious). As explained above, the termination condition in the current application is not a configuration, because the location(s) of the point(s) that are still illuminated (or the Red or Green points in the terminology of (c.10)) is immaterial.

(c.16) In the middle of p. 9 it says: "Applicant states that the elements make little or no sense at all since the references used are not set up for two players games. However two players are not claimed." The latter argument is not to the point. The question whether an element makes sense in the context of Weiner *et al* with Lites Out! is not dependent on what else I claim. It is dependent only on the element and the text of Weiner *et al* and Lites Out! (and the state of the art).

(c.17) It then says: "Weiner discloses in 6:45-55 that two players may play the game". What Weiner *et al* disclose in 6:45-50 is one person playing a full game from starting configuration to end configuration, and then another player playing. However, this method of playing and, importantly, all the other ideas that appear in this paragraph do not make any of the elements (a)-(e) more obvious, and therefore it is irrelevant to the discussion here.

(c.18) Summary: None of the 5 elements (a)-(e) which were discussed above (and listed in paragraph (c.2) of the argument in the *original* appeal brief) appears in Weiner *et al* with Lites Out!. Apart from (c) they are clearly non-obvious with respect to Weiner *et al* and Lites Out!, and even (c) is not actually obvious. Their combination is very non-obvious, and in the context of the devices and programs of Weiner *et al* and Lites Out! doesn't make sense, because the latter are not set up for two-players games.

Yehouda Harpaz



24 Dec 2005